Aster or Solidago?

In September last I found some rather anomalous specimens of a plant in the prairie near my house. Englewood, like other suburbs of Chicago and many western towns, has its houses scattered over the prairie, with interspersed patches of grass land as virgin as when the buffalo and Indian roamed over it. Such a piece of ground lies between my house and the school house where a part of each school day is spent. Hence, this vacant lot is passed several times a day on the way to school, or market, or postoffice, and any change of floral appearance quickly noticed. It is often the scene of a raid for specimens of any particular plant known to grow there when needed to illustrate a lesson in botany. Something of a specialty is made of the study of the *Compositæ* in the fall, and few escape the search of pupils and teacher for class work. For the past five years this has been the case, and I thought about every inch of that acre of ground was known. But, greatly to my surprise, there appeared, close to the side-walk, a plant I had never seen before. Was it a Golden-rod or Aster? But who ever heard of an Aster with yellow rays? was the second thought, on pulling up the specimen. Taking it to my room and examining it, it was seen to be unique, and not much time elapsed before the vacant lot was thoroughly searched and more specimens found. About all were single stalks, except one, in which more than a dozen stems sprang from the same root. They were about a foot high. All the stems from this root did not bear yellow-rayed flowers; some were white, some ochroleucous, some pale or sulphur yellow. It was evident that the habit of the plant was that of *Aster ptarmicoides*, Torr. and Gr., plenty of which, both single and many stalked, grew in the vicinity. But the flowers were considerably smaller than those of any *Aster ptarmicoides* observed, as proved by comparison, being about half an inch in diameter. The plant was smoother, and the leaves tapered below into a clasping petiole, or one tending to clasp, on some of the stems. In this it suggested *Solidago Riddellii*, Frank, growing close at hand. Could it be a hybrid, a cross between this *Aster* and *Solidago*, or some other *Solidago?* was the next query. Will genera cross? This led to the preservation of the plant. It was not dug up, but left to fruit, except a little cut off to get a variety of the flowers. A stake was driven beside it so that it might be identified when the flowers had faded, and all the heads gathered as

they ripened. I wished to see if it could be propagated. But most of the achenia are withered—apparently blasted. Some heads, however, show from one to three achenia that are plump and look as if they might grow. Heads of *A. ptarmicoides* and *S. Riddellii* gathered at the same time are found to have generally perfected their fruit. On comparing the fruit with that of *A. ptarmicoides* it is seen to be quite identical, smooth, light-colored and of the same size. That of *S. Riddellii* is slightly roughened under a lens, and is characteristically marked by five to seven dark-colored longitudinal stripes. Some of the achenia of the anomalous plant seem a little striped, but very faintly, so that it can hardly be relied on for a character. The involucre is smaller and more cylindrical than in *A. ptarmicoides*. The scales are about the same as in that species.

The plant has been left where it grew, so that it may be noticed another season, and its behavior observed. The interest of the plant to me is whether *Aster* and *Solidago* will cross, especially in the wild state, and should the cross be permanent and capable of propagation by seed, what bearing it may have on the origin of species. It can not indeed be proved that it is a hybrid, but this seems the best explanation now available. Had all the flowers been yellow, or even ochroleucous, it might seem a pure example of one or the other genus, but with flowers of three colors from the same root, and other intermediate characters, it is hard to regard it as such. The flowers, in color and size, are a mean between *A. ptarmicoides* and the Solidagos, others, besides *S. Riddellii*, being near neighbors, as *S. nemoralis*, *S. lanceolata*. It should be added in passing that the prairie here was originally wet, but the opening of streets and railroads, with accompanying ditches and sewers, has drained it so as to produce a promiscuous mingling of wet land and dry land floras, as far as they are able to accommodate themselves to the change, and hence queer floral neighbors are found.

It is possible this plant may throw some light on the *Aster lutescens* of Torrey and Gray's Flora of North America, gathered by Douglas and assigned the habitat: "Saskatchewan, dry elevated grounds of the Assiniboin River." It is stated that Douglas had labeled his specimens "flowers yellow," but that the rays appeared to have been at most ochroleucous. "If this be the case," the authors add, "it is doubtless a distinct species, if not, it may prove to be only a variety of *A. ptarmicoides*, as Hooker supposes."—E. J. Hill, *Englewood, Ill.*